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AUTHOR Peterson, Peter B.
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ABSTRACT

The purpose of this study was to investigate the effect of U.S. Army Engineer Officer Candidate training and the stability of this training when measured again years after departure from Officer Candidate School. A self-description inventory was administered at the beginning of a 6-month training program, again near the end of the program, and then on a third occasion several years after departure from the training program. A total of 347 individuals were examined as both entering and graduating students. In addition, a total of 757 individuals were examined as both graduating students and again years later after departing from the Officer Candidate School. It was found that several scales that measured change during training also differentiated between graduating and nongraduating students, thus indicating that the effects of selection and training were, to a substantial degree, similar. Significant differences were also found between the scores of graduating students who remained in the Army and those who departed. The significance of these findings from the point of view of a better understanding of the training process and of the implication for Officer Candidate School policy was discussed. (Author)

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EFFECT AND STABILITY OF LEADERSHIP TRAINING

By

Peter B. Petersen

Doctor of Business Administration

U.S. DEPARTMENT OF HEALTH,
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EFFECT AND STABILITY OF LEADERSHIP TRAINING

The purpose of this paper is to describe an investigation of the effect of U.S. Army Engineer Officer Candidate training and the stability of this training when measured again three years later. In an earlier study, Petersen and Lippitt (1968), conducted a comparison of the average self-reported behavioral style as measured by the JAIM[1] between a group of 561 entering students and a group of 319 graduating students attending the U.S. Army Engineer Officer Candidate School at Fort Belvoir, Virginia. The JAIM scales of each of these two groups were significantly different; however, the effect of training could not be measured because the same individuals were not tested as both entering and graduating students. In the normal course of events, most of the individuals who failed to graduate actually resigned from the program rather than wait to be selected for relief by the school authorities. There was a possibility that this self-selection departure process would further prevent an accurate analysis between entering and graduating students. If individuals with certain behavioral styles were selected to fail, it could be possible that instead of training men to become officers, the school was selecting men to become officers. A more likely possibility to account for the difference between groups of entering and graduating students was a combination of both training and selection.

Research connected with a doctoral dissertation[2] further developed the original study by investigating the immediate effects of training and the stability of these effects. Individuals were examined at the

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[1]JAIM (Job Analysis and Interest Measurement) is a self-description inventory with 125 questions, using mostly a forced choice format. It is distributed for research purposes by the Office of Special Tests of the Educational Testing Service.

[2]The author is grateful for the financial support pertaining to the doctoral dissertation jointly furnished by The George Washington University, the U.S. Steel Corporation, and the Army Research Office, U.S. Army.

beginning of a six-month training program, again near the end of the training program, and then on a third occasion several years after departure from the training program. A copy of the identical test instrument was administered in each of these three situations. A total of 347 individuals were examined as both entering and graduating students. In addition a total of 757 individuals were examined as both graduating students and again years later after departing from Officer Candidate School.

Conditions of the testing facilities were reasonably equal during 1966 and 1967, when questionnaires were administered to officer candidate students. A reasonably uniform verbal briefing was conducted by this researcher prior to the administration of all questionnaires to the students. Initially during the briefing, students were instructed not to complete blanks on the answer sheet pertaining to their name. They were further informed that their answers would in no way be used against them nor in their favor by the U.S. Army. The stated concept of an evaluation of a class mean answer rather than an evaluation of individual answers seemed to help reduce most of the personal apprehension of students in completing the questionnaire. After the examination had started, students were then asked to provide their names and home addresses on a voluntary basis if they were interested in completing the questionnaire again several years after they departed from Officer Candidate School. While some of the students were administered the questionnaire in the fall of 1966, the majority of individuals sampled as students were examined during 1967. Those persons reexamined years after graduation were mailed a copy of the identical questionnaire during the summer of 1970. Therefore, in most cases, there was approximately a three-year interval between testing as a student and later as a former student. Many of the individuals voluntarily reexamined years after departure from Officer Candidate School did not graduate, and most of the individuals reexamined during 1970 were no longer members of the U.S. Army. When examined initially 2,531 individuals voluntarily provided their names and home addresses so that they could be contacted in the future for further testing. Seventy-seven percent or 1,951 of the individuals who provided their names and addresses years earlier were located and indicated a willingness to again complete the questionnaire. Approximately eighty-six percent or 1,681 individuals returned completed questionnaires. The remainder, 270 persons, did not return completed questionnaires.

The test instrument used in this study to compare these two groups of students is the Job Analysis and Interest Measurement (JAIM)[1]. It has

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[1]The author is grateful to Regis H. Walther, author of the test instrument, for his personal assistance in accomplishing much of the work described in this paper.

been used for studying more than 30 occupational groups including engineers, lawyers, foreign service officers, ambassadors, judges, social workers, policemen, physicists, and secretaries. Walther (1964) found that this instrument can distinguish among occupational groups and between superior and weak performances within an occupational group. It is a 125-item self-report questionnaire used to measure the personal qualities of the worker (other than aptitudes, training, or knowledge), which have an influence on job success or failure.

Theoretical Framework

Entrance to Officer Candidate School is voluntary and upon graduation the student is commissioned as a second lieutenant. Early in the training program it becomes evident to the individual student that he must conform to behavioral standards as well as academic standards. Most entering candidates find themselves in an environment requiring a different role from that to which they are accustomed. To survive and graduate, the student is encouraged to adapt to the school's environment and to assume new roles. Entering students that later graduate tend to acquire new roles consistent with the reward and punishment standards of the school per se and their peers. During the six-month training program many of these new roles probably become part of the individual's personality and self-conception.

> All roles organize behavior, but some roles are so important that they serve to integrate the personality. They become part of the individual's self-conception, which is built around the behavior and the attitudes that go with a role. The individual sees the world from a point of view of a particular role and may find it difficult to take on other roles or to behave in ways alien to his critical role.[1]

It is conceptualized that successful students, after becoming aware of the specific standards required by the school and their peers, probably adjust their roles to accommodate these standards. As the course progresses it is further considered that the personal qualities of these individuals (other than aptitudes or knowledge) also adjust and become

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[1]Leonard Broom and Phillip Selznick, Sociology (New York: Row, Peterson and Co., 1958), p. 98.

compatible with the individual's newly acquired roles. If being successful is measured in terms of conforming to the established standards of the program, it appears that those individuals who do not assume the correct roles will leave school prior to graduation. The majority of persons who fail to graduate voluntarily depart from the school after it appears to them that further effort on their part in working towards graduation is fruitless. Some individuals who do not meet the prescribed standards are "turned back" to more junior classes and many of them eventually graduate. It appears that almost all entering students, if they desire to apply themselves, can graduate. Approximately a third of the entering students, however, fail to complete the course. It appears that these individuals, as a group, do not adapt or are not especially interested in adapting to the required new roles.

> The hopeful candidate is now subjected to a nearly catastrophic experience, which breaks down to a large extent his previous personality organization. His previous valuations fail him, and in order to find a basis for self-respect, he must adopt new standards or escape from the field. His high motivation to become an officer usually rules out the latter alternative. At the same time, new, appropriate attitudes are built up and established. The catastrophic experience provides a kind of purgatory, a definite demarcation from the candidate's enlisted incarnation that puts a barrier between the new officer and his enlisted memories. It has some of the characteristics of a conversion experience, or the ordeal of a medieval knight. The effect of this ordeal on the officer candidate is not only to attack his previous personality, but to exert a positive influence in the desired direction.[1]

While graduates of Officer Candidate School acquire roles commensurate with those needed as a junior officer, it appears that these roles are not necessarily appropriate for more sophisticated assignments. It is further conceptualized that the roles acquired during the individual's Officer Candidate School experience will diminish in importance as a further socialization process occurs pertaining to the individual and higher level assignments.

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[1]Samuel A. Stouffer, et al., The American Soldier: Adjustment During Army Life (Princeton, N.J.: Princeton University Press, 1949), p. 389.

> Only in the most primitive of organizational forms, however, is the influence of the organization over the member manifest solely in terms of uniformity of behavior. As organizations become more complex, the division of labor and the specialization of tasks prescribe very different patterns of behavior for different roles. The need for reliability of role performance, however, becomes no less; on the contarary, it increases with the complexity and sophistication of the organization.[1]

Hypotheses

The theoretical framework of this study first concentrated on the acquisition of new roles by those individuals who successfuly completed training. These roles reflect adjustment by the student to the established standards of the total school environment including the standards of peers. Self-reported behavioral styles commensurate with these roles are conceptualized as changing to a lesser extent during the training program. It was further conceptualized that behavior acquired during the individual's Officer Candidate School experience will diminish in importance to the individual as a further socialization process occurs relative to the individual's interaction with increasingly higher level assignments. As new roles are assumed to cope with these new situations, the effects of training at Officer Candidate School will tend to diminish. Commensurate with these changes in roles, associated self-reported behavioral styles will also change.

The following assumptions are applicable to both hypotheses used in this study:

1. The standards and techniques used by the Officer Candidate School authorities in evaluating students remained constant during the sampling period.

2. The system of rewards and punishments for students remained constant during the sampling period.

3. The Job Analysis and Interest Measurement instrument accurately measures behavioral styles.

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[1]Daniel Katz and Robert L. Kahn, The Social Psychology of Organizations (New York: John Wiley & Sons, Inc., 1966), p. 200.

Introduction to Hypothesis I

In selecting the specific behavioral style scales that would be most likely influenced by training, the results of an earlier study conducted by this student were considered. Of the 34 behavioral style scales previously examined, 15 of these scales were significant at the .01 level. In addition there seemed to be a logical reason for these statistical results in terms of expectations of change that would be reasonably expected to occur during Officer Candidate School training. These 15 scales are incorporated in the first hypothesis and are presented in Table 1.

TABLE 1

RESULTS OF TRAINING[a]

Scale	Hypothesized Increased or Decreased[b]
Self-Confidence	+
Perseverance	+
Persuasive Leadership	+
Self-Assertiveness	+
Move Toward Aggressor	-
Move Against Aggressor	+
Independence	+
Directive Leadership	+
Participative Leadership	-
Delegative Leadership	+
Knowledge of Results	+
External Controls	+
Supervisory Activities	+
Activity-Frequent Change	+
Approval from Others	-

[a]Hypothesized significant change in average behavioral style of group of 347 entering students compared with when they become graduating students. A confidence level of .05 will be used as a test of significance relative to each behavioral style scale presented. For this hypothesis to be confirmed 3 or more scales must be significant at the .05 level of confidence pertaining to the predicted increase or decrease.

[b]Plus (+) indicates mean score for individuals as graduating students higher. Minus (-) indicates mean score for individuals as graduating students lower. (n = 347)

Hypothesis I

The average behavioral style of a group of individuals participating in Officer Candidate School training changes significantly during training. Compared with when they were entering students, the same group of 347 individuals measured again as graduating students tends to significantly change their behavioral style as presented in Table 1. A confidence level of .05 will be used as a test of significance relative to each behavioral style scale presented in Table 1.

Introduction to Hypothesis II

In considering the stability of the graduating students self-reported behavioral style it was conceptualized that those behavioral style scales that changed the most during training would probably be the least stable. The 15 scales selected for the first hypothesis as being the most likely to change during training were now considered in terms of their lack of stability following graduation. Earlier research findings were considered in conjunction with the results of a pilot study to develop a further evaluation of specific scales that would tend to be least stable. Those selected represent 11 of the 15 scales considered in the first hypothesis, and one additional scale, in the pilot study, that appeared to be statistically relevant. These 12 scales are incorporated in hypothesis II and are reflected on Table 2.

Hypothesis II

The effects of the training at an Officer Candidate School tend to diminish following graduation. Therefore, there will be a significant difference in the average behavioral style between a group of 757 graduating students and the same group of individuals examined again years after graduation. A confidence level of .05 will be used as a test of significance pertaining to each behavioral style scale presented in Table 2.

Method of Evaluation of Hypotheses

Two statistical analysis techniques will be used in the evaluation of hypotheses. The t-test will be used for comparisons between groups pertaining to specific behavioral style scales, and a binomial probability distribution will be used to test the hypotheses in whole. While a t-ratio can be determined in terms of a one-tailed or a two-tailed test, the more conservative two-tailed test will be applied in this study even though the

TABLE 2

STABILITY OF TRAINING[a]

Scale	Hypothesized Increase or Decrease[b]
Self-Confidence	-
Persuasive Leadership	-
Self-Assertiveness	-
Move Toward Aggressor	+
Move Against Aggressor	-
Directive Leadership	-
Participative Leadership	+
Knowledge of Results	-
External Controls	-
Supervisory Activities	-
Approval From Others	+
Group Participation	+

[a]Hypothesized significant difference in average behavioral style between a group of 757 individuals examined as graduating students and the same group of individuals examined again years after graduation. A confidence level of .05 will be used as a test of significance relative to each behavioral style scale presented. For this hypothesis to be confirmed 3 or more scales must be significant at the .05 level of confidence pertaining to the predicted increase or decrease.

[b]Plus (+) indicates mean score for group of individuals years after graduation higher. Minus (-) indicates mean score for group of individuals years after graduation lower. (n=757)

direction of a difference in means had been predicted in every case. The critical value of t used in this analysis will be $t < 1.97$ pertaining to significance at the .05 level. Both hypotheses consist of a series of predictions related to increases or decreases in selected behavioral style scales. The first hypothesis consists of 15 predicted increases or decreases in certain behavioral style scales while the second hypothesis consists of 12 predicted increases or decreases in selected behavioral style scales.

In an analysis where a relatively large number of scales are evaluated, there is a possibility that at least one apparently significant relationship, caused by chance alone, will appear. For example, an analysis with an .05 level of significance, and 15 scales, will result, on the average, in .75 relationships occurring entirely due to chance. The probability of these relationships occurring can be estimated by computing the mean and the standard deviation of the binomial distribution and approximating the binomial probabilities through use of the normal curve.[1] This approach is relatively conservative in that it does not provide for the result of a predicted outcome which is significant at high levels such as the .001 level of confidence. With respect to the first hypothesis in this study, 2.4 relationships out of fifteen can be expected to be significant at the .05 level five percent of the time and therefore three correct predictions out of fifteen concerning predicted intensity and direction will be necessary to confirm the first hypothesis. The same decision rule can be used for the second hypothesis since reducing the number of scales from 15 to 12 does not change the number of significant relationships which could occur due to chance.

Findings and Analysis

Hypothesis I:Effect of Training

Scores of Officer Candidate School students on 15 selected JAIM scales obtained at the time of graduation differ significantly from scores obtained at the time of their entrance to training. Table 3 presents the results of the first hypothesis. An evaluation of this hypothesis indicated that fourteen of the fifteen scales are significant. The first hypothesis is therefore confirmed since the decision rule of three or more significant scale differences has been met.

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[1]Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Holt, Rinehart and Winston, 1964), pp. 221-224.

TABLE 3

DIFFERENCES IN SELECTED JAIM SCORES OF OFFICER CANDIDATE SCHOOL STUDENTS BETWEEN TIME OF ENTRANCE AND GRADUATION (n=347)

Scale	Predicted Increase or Decrease	t-test Results[a]	Level of Confidence[b]	Prediction Confirmed
Self Confidence	+	+6.58	.001	Yes
Perseverance	+	+5.37	.001	Yes
Persuasive Leadership	+	+8.54	.001	Yes
Self Assertiveness	+	+7.66	.001	Yes
Move Toward Aggressor	-	-5.38	.001	Yes
Move Against Aggressor	+	+7.01	.001	Yes
Independence	+	+2.41	.05	Yes
Directive Leadership	+	+5.33	.001	Yes
Participative Leadership	-	-6.19	.001	Yes
Delegative Leadership	+	+1.24	n/a	No
Knowledge of Results	+	+3.90	.001	Yes
External Controls	+	+8.43	.001	Yes
Supervisory Activities	+	+6.43	.001	Yes
Activity-Frequent Change	+	+3.70	.001	Yes
Approval From Others	-	-11.17	.001	Yes

[a]Plus (+) indicates mean score for individuals as graduating students higher. Minus (-) indicates mean score for individuals as graduating students lower.

[b]$p < .05$ with $t = 1.97$; $p < .01$ with $t = 2.58$; $p < .0001$ with $t = 3.30$

Analysis

There was a significant difference in 14 behavioral style scale scores obtained from the identical 347 Officer Candidate School students before and after training. When compared with themselves later as graduating students, these men scored significantly higher as entering students on the following scales:

Scale	t-test Results
1. Approval From Others	-11.17
2. Participative Leadership	- 6.19
3. Move Toward Aggressor	- 5.38

When measured again approximately six months later near the completion of their training, these individuals scored significantly higher on the following scales:

Scale	t-test Results
1. Persuasive Leadership	8.54
2. External Controls	8.43
3. Self Assertiveness	7.66
4. Move Against Aggressor	7.01
5. Self Confidence	6.58
6. Supervisory Activities	6.43
7. Perseverance	5.37
8. Directive Leadership	5.33
9. Knowledge of Results	3.90
10. Activity-Frequent Change	3.70
11. Independence	2.41

It can be concluded that this group of men changed their average self-reported behavioral style during the time they participated in Officer Candidate School training. It seems to appear from these results that this shaping process emphasizes an insistence on immediate task performance with the results obtained through persuading, directing, or supervising other people. There is a considerable value placed in being self-assertive and in perseverance. While these results reflect an authoritarian and aggressive attitude, there is a corresponding lack of concern for the feelings of others relative to the accomplishment of an important task. Here the mission seems to have the highest priority, and the welfare of others seems to be considered second in priority. While the nature of the developed change in self-reported behavioral styles may be that desired for young combat officers, the implications of these characteristics for higher levels of responsibility and effective personal interaction seem to be doubtful.

Hypothesis II:Stability of Training

The second hypothesis specifically addresses the subject of the stability of the effects of Officer Candidate School training. It was conceptualized that attitudes acquired during an individual's Officer Candidate School experience will tend to revert to the individual's initial attitudes when he returns to the work situation after his departure from training.

There will be a significant difference in 12 selected JAIM scales between scores obtained at the time of graduation from Officer Candidate School and those obtained approximately three years later. The direction will be opposite from the change that took place during training. Table 4 presents the results of the test of the second hypothesis. This hypothesis was also confirmed in that four of the twelve scales showed significant differences in the predicted direction. The decision rule required that three or more scales show significant differences. It should be noted, however, that three other scales showed highly significant differences in a direction opposite from what was predicted.

Analysis

While the findings of other researchers tend to indicate that the work environment and leader exert a major influence on the attitudes of the individual, this researcher considered incorrectly that this influence was a relatively uncomplex phenomenon. It was inferred in the second hypothesis that behavioral styles acquired in training would,over time, simply revert towards their configuration prior to training. This was an incorrect inference. Results pertaining to the second hypothesis suggest that this hypothesis was not adequately formulated. A better formulation would have been that individuals tend to revert to previous behavioral styles when negative reinforcement is present in the post graduation period. Also that behavioral styles tend to continue to change in the same direction as in training when positive reinforcement is present during the post graduation period. Further, behavioral styles tend to remain the same as acquired in training when neither a positive nor negative reinforcement is present in the post graduation period. However, such a revised formulation should consider the possibility that a slight positive influence might tend only to maintain the level of the behavioral style acquired by training. Also to be considered, is the possibility that an absence of positive or negative influence might tend to permit a reversion of behavior to that style held prior to training.

TABLE 4

DIFFERENCES IN SELECTED JAIM SCORES BETWEEN TIME OF GRADUATION AND RETESTING THREE YEARS LATER (n=757)

Scale	Predicted Increase or Decrease[a]	t-test Results	Level of Confidence[b]	Prediction Confirmed
Self Confidence	-	+4.78	n/a	No
Persuasive Leadership	-	-0.99	n/a	No
Self Assertiveness	-	-2.43	.05	Yes
Move Toward Aggressor	+	-0.73	n/a	No
Move Against Aggressor	-	-1.70	n/a	No
Directive Leadership	-	-11.94	.001	Yes
Participative Leadership	+	+5.69	.001	Yes
Knowledge of Results	-	-1.49	n/a	No
External Controls	-	-10.33	.001	Yes
Supervisory Activities	-	+11.10	n/a	No
Approval From Others	+	-2.59	n/a	No
Group Participation	+	+ .95	n/a	No

[a] Plus (+) indicates mean score for group of individuals years after graduation higher. Minus (-) indicates mean score for group of individuals years after graduation lower.

[b] $p < .05$ with $t = 1.97$; $p < .01$ with $t = 2.58$; $p < .001$ with $t = 3.30$

When the same group of 757 individuals were tested approximately three years after graduation, their self-reported behavioral style pertaining to the scale Participative Leadership increased (as hypothesized) significantly and there was a significant decrease (as hypothesized) in the scores associated with the following behavioral style scales:

Scale	t-test Results
1. Directive Leadership	-11.94
2. External Controls	-10.33
3. Self-Assertiveness	-2.43

It appears that these individuals experienced problems in applying directive leadership procedures that had been perhaps acceptable to fellow Officer Candidate School students, but not acceptable to enlisted personnel having a different outlook toward the U.S. Army. As negative reinforcement influences were experienced by these young officers, the intensity of this behavioral style that previously increased during training was now subsequently decreased.

The need for adequate operational control of subordinates is stressed during training, and thus the individual student seems to gain a self-reported belief that people require external controls. It is interesting to note that years after graduation, the same individuals reflect a significant decrease in their veiws that people require external controls. It is speculated that negative reinforcement influences played a major part in this change. While the graduating student tends to be competitive and seeks to pursue his own goals when he is in competition with the goals of others, the same group of men years later tend to decrease their self-reported value of being self-assertive. The marked decrease in the scales of Directive Leadership, External Controls, and Self-Assertiveness is matched by a significant increase in the scale of Participative Leadership (t-test result 5.69). It is speculated that positive reinforcing influences pertaining to participative leadership were mainly responsible for this change.

While not a part of this hypothesis concerning the stability of acquired behavioral style scales, the reverse learning effect of the scale Directive Leadership as it decreases in value years later to a position lower than when measured prior to training is worthy of consideration. The same group of 210 individuals were tested as entering students, graduating students, and then again approximately three years after the completion of training. Their t-test results pertaining to the scale Directive Leadership are as follows:

Graduating Students[1] vs Entering Students (n=210)	Men 3 Years[1] After Graduation vs Graduating Students (n=210)	Men 3 Years[1] After Graduation vs Entering Students (n=210)
3.49	-5.91	-2.98

[1]A positive t-value indicates this group higher and a negative t-value indicates this group lower.

It can be speculated that the negative reinforcing influences experienced by these 210 young officers during the period 1967-1970 were so strong that their feelings toward directive leadership not only reverted back to their original score but decreased to a point considerably lower than they held prior to Officer Candidate School training.

Other Relevant Issues

The results of this research may shed some light on other relevant issues. Although no hypotheses were formulated with respect to the following issues, an analysis has been made of the data obtained in connection with this study to determine possible answers to the following:

1. Will scores obtained by using the test instrument at the time of entry into the training program discriminate between those who will eventually graduate and those who will voluntarily depart from the program prior to graduation?

2. Will scores obtained by using the test instrument at the time of entry into the training program discriminate between those who will remain in the Army years later and those who will depart from the Army years later?

3. Will scores obtained by using the test instrument at the time of entry into the training program discriminate between those who will both graduate and remain in the Army years later and those who will not graduate and depart from the Army years later?

With respect to the first additional issue considered relevant, it was found that scales which measured change during training also differentiated at the time of entry between those who would eventually graduate and those who would later voluntarily depart from Officer Candidate School prior to graduation. This seemed to indicate that the effects of selection and training were to a substantial degree similar. This relationship is presented in Table 5. It is interesting to find that the intensity and direction of change in many scales is rather similar. While Table 5 shows a comparison of those differences that may be attributed to training, Tables 6 and 7 attempt to simplify this complex relationship. Table 6 concerns differences attributed to selection. Entering students are categorized into two groups in Table 6: those who later graduate, and those who later voluntarily depart from training prior to completing the course. A comparison of the scores of entering students relative to these two categories indicates that there is a significant difference in their self-reported answers pertaining to the JAIM scales.

TABLE 5

BEHAVIORAL STYLES DIFFERENTIATED BY SELECTION AND TRAINING

Scale	t-test Results Comparison of Entry Scores Graduate (n=833) vs Voluntarily Depart (n=328)[1]	t-test Results Comparison of Before & After Successful Completion of Training (n=347)[1]
1. Optimism	5.73***	-1.61
2. Self Confidence	8.34***	6.58***
3. Perseverance	3.94***	5.37***
4. Orderliness	3.97***	4.57***
5. Plans Ahead	2.51*	0.0
6. Moral Absolutes	2.60**	-2.42*
7. Slow Change	-0.53	2.84**
8. Persuasive Leadership	5.67***	8.54***
9. Self Assertiveness	3.66***	7.66***
10. Move Toward Aggressor	0.09	-5.38***
11. Move Away From Aggressor	-3.07**	-4.19***
12. Move Against Aggressor	2.92**	7.01***
13. Prefers Routine	-0.06	-2.49*
14. Identifies With Authority	2.14*	-3.85***
15. Independence	0.22	2.41*
16. Directive Leadership	3.32***	5.33***
17. Participative Leadership	-0.82	-6.19***
18. Delegative Leadership	-2.23*	1.24
19. Knowledge of Results	1.12	3.90***
20. External Controls	1.28	8.43***
21. Systematical-Methodical	-0.37	-4.78***
22. Problem Analysis	0.30	2.53*
23. Social Interaction	4.23***	-2.63**
24. Mechanical Activities	-1.40	0.85
25. Supervisory Activities	6.43***	6.43***
26. Activity-Frequent Change	4.05***	3.70***
27. Group Participation	2.42*	-1.30
28. Status Attainment	4.07***	1.13
29. Social Service	-2.51*	-1.95
30. Approval From Others	-2.36*	-11.17***
31. Intellectual Achievement	1.03	2.89**
32. Maintains Societal Standards	0.59	2.86**
33. Role Conformity	1.22	1.68
34. Academic Achievement	5.19***	1.31

[1]A positive t-value indicates graduating students are higher in this particular scale while a negative t-value indicates that graduating students are lower as pertains to this particular scale. * $<.05$ with t=1.97 ** $<.01$ with t=2.58; *** $<.001$ with t=3.30

TABLE 6

DIFFERENTIATION BY SELECTION

Entering Students who later graduate higher on these scales (n=833)		Entering Students who later voluntarily depart training higher on these scales (n=328)	
Scale	t-test Result	Scale	t-test Result
Self Confidence	8.34	Move Away From Aggressor	-3.07
Supervisory Activities	6.43	Social Service	-2.51
Optimism	5.73	Approval From Others	-2.36
Persuasive Leadership	5.67	Delegative Leadership	-2.23
Academic Achievement	5.19		
Social Interaction	4.23		
Status Attainment	4.07		
Activity-Frequent Change	4.05		
Orderliness	3.97		
Perseverance	3.94		
Self Assertiveness	3.66		

TABLE 7

DIFFERENTIATION BY TRAINING

Students higher on these scales at time of graduation		Students higher on these scales at time of entry	
Scale	t-test Result	Scale	t-test Result
Persuasive Leadership	8.54	Approval From Others	-11.17
External Controls	8.43	Participative Leadership	-6.19
Self Assertiveness	7.66	Move Toward Aggressor	-5.38
Move Against Aggressor	7.01	Systematical-Methodical	-4.78
Self Confidence	6.58	Move Away From Aggressor	-4.19
Supervisory Activities	6.43	Identifies With Authority	-3.85
Perseverance	5.37	Social Interaction	-2.63
Directive Leadership	5.33		
Orderliness	4.57		
Knowledge of Results	3.90		
Activity-Frequent Change	3.70		

This significant difference is quite similar to the differences attributed to training in Table 7. In Table 7 a comparison is made of the scores obtained from the same individuals before and after training. The similarity of results shown in both Tables 6 and 7 indicates that the difference of behavioral style scales attributed to training is similar to the difference of behavioral style scales attributed to selection.

With regard to the second issue considered relevant, it was found that JAIM scores obtained at the time of entry did discriminate significantly between those individuals who would remain in the Army years later and those who would, years later depart from the Army. It seems logical that those who score high with regard to the scale Academic Achievement tend to graduate. However, it is interesting to note further in, Table 8, that those scoring high on Academic Achievement later tend to depart from the Army.

With respect to the third issue considered relevant, information obtained years later pertaining to graduation and retention was used to group the entering scores of individuals so that a comparison could be made between those who graduated and remained in the Army with those who did not graduate and subsequently departed from the Army. Results are shown in Table 9. These scores obtained at the time of entry into training clearly show that there is a significant difference between these two groups and that the JAIM instrument can discriminate between them.

While this portion of the paper presented findings and an analysis of these findings, the next portion will present conclusions and recommendations for further research.

TABLE 8

DIFFERENTIATION BY RETENTION
IN ARMY

Those who years later remain in Army are higher in these scales at time of entry into training (n=184)		Those who years later have departed from the Army are higher in these scales at time of entry into training (n=599)	
Scale	t-test Result	Scale	t-test Result
Supervisory Activities	3.88	Academic Achievement	-3.57
Moral Absolutes	2.90	Intellectual Achievement	-2.27
Orderliness	2.66	Approval From Others	-2.13
Activity-Frequent Change	2.46	Problem Analysis	-2.07
Persuasive Leadership	2.44	Move Away From Aggressor	-1.96
Perseverance	2.43		
Role Conformity	2.19		
Mechanical Activities	2.18		
External Controls	2.17		

TABLE 9

COMPARISON OF THOSE WHO GRADUATE AND REMAIN IN ARMY WITH THOSE WHO DO NOT GRADUATE AND DEPART ARMY

Those who graduate and remain in Army higher in these scales at time of entry into training (n=175)		Those who do not graduate and depart Army higher in these scales at time of entry into training (n=174)	
Scale	t-test Result	Scale	t-test Result
Supervisory Activities	6.09	Move Away From Aggressor	-2.88
Self-Confidence	3.95	Problem Analysis	-2.17
Persuasive Leadership	3.73	Approval From Others	-1.96
Self-Assertiveness	3.47		
Orderliness	3.44		
Directive Leadership	3.44		
Activity-Frequent Change	3.41		
Optimism	3.39		
Moral Absolutes	3.33		
Social Interaction	3.07		

Conclusions and Recommendations for Further Research

Conclusions

1. The average behavioral style of individuals participating in Officer Candidate School training changes during training. As graduating students, individuals tend to reflect the following changes in the previously hypothesized behavioral style scales. They score higher on the following scales:

Persuasive Leadership
External Controls
Self-Assertiveness
Move Against Aggressor
Self-Confidence
Supervisory Activities
Perseverance
Directive Leadership
Knowledge of Results
Activity-Frequent Change
Independence

They score lower on the following scales:

Approval From Others
Participative Leadership
Move Toward Aggressor

It can be concluded that this group of men changed their average self-reported behavioral style during the time of training. This behavioral change was considered as tending to reflect adjustment by the student to the established standards of the school environment including the standards of peers.

2. There was a significant difference between scores obtained at the time of graduation from Officer Candidate School and those obtained approximately three years later. While this hypothesis pertaining to the lack of stability of Officer Candidate School training was confirmed, it should be noted that several of these self-reported behavioral style scales continued to change in the same direction as during training.

This suggeststhat those behavioral styles that receive positive reinforcement following graduation tend to increase, and that those behavioral styles that receive negative reinforcement following graduation tend to decrease in intensity. In addition, those scales that receive neither positive or negative reinforcement tend to remain approximately the same.

It is speculated that a slight positive influence might only tend to maintain the level of the behavioral style acquired by training. Also that an absence of positive or negative influence might tend to permit a reversal of behavior to that style held prior to training.

3. Although no hypotheses were formulated, an analysis of the data in connection with this study indicated that scores obtained by using the test instrument at the time of entry into the training program effectively discriminate the following:

a. Between those who will eventually graduate and those who will voluntarily depart from the program prior to graduation.

b. Between those who will remain in the Army years later and those who will depart from the Army years later.

c. Between those who will both graduate and remain in the Army years later and those who will not graduate and depart from the Army years later.

Recommendations for Further Research

1. Differences in JAIM scores associated with selection, training, and retention were considered in this study. The extent of the graduate's performance as an officer was not considered. It would be worthwhile to compare students' JAIM scores with the officer efficiency indexes[1] the same individuals receive later as officers. This may provide an insight in predicting future performance.

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[1]Officer efficiency index: A composite of an individual's officer efficiency report results during a prescribed period. No longer officially used to determine promotions or assignments. Occasionally used in official personnel research studies.

All officers in the sample who are now on active duty have attained the grade of captain. A further evaluation of the relationship of performance and JAIM scores previously sampled would be to isolate those individuals in the sample who in 1971 receive an early promotion[1] from captain to major. Then study the prior JAIM scores of these individuals for common characteristics. While it was possible to somewhat isolate the effects of training and selection and to predict to a lesser extent the stability of acquired behavioral style scales, it will be more difficult to isolate the characteristics associated with what is required for "excellent" performance.

2. Also recommend that these individuals continue to be tested as they mature further and reach various levels of their civilian or military careers.

Closing Remarks

This study investigated the effect of training at a particular Officer Candidate School. A limitation was that the factors that influenced these men to change during and after training were not isolated. However, specific questions concerning the immediate effects of training and the stability of these effects three years later were answered.

In addition to the data analyzed in this study, other information has been obtained. A biographical data questionnaire completed with the JAIM contains considerable information that will extend the present analysis of this study. The results of 271 individuals tested while attending Infantry Officer Candidate School, Fort Benning, Georgia, will be used to further examine the Officer Candidate School process. The results of 545 individuals, in various roles, who completed the test instrument in Vietnam during 1969 will furnish an added dimension to the current analysis of the persons included in this study. This additional data plus a more intensive analysis of the data collected for the doctoral dissertation will be analyzed in connection with an additional grant of funds received from the Department of the Army.

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[1]Normally 5 percent of those individuals selected for promotion to the grade of major consist of captains considered by the promotion board as outstanding but who are too junior pertaining to longevity to meet conventional promotion criteria. In their case part of the longevity requirement is waived and they are promoted prior to their peers.

While much has been written about training, very little has been written concerning the effect of Officer Candidate School training and the stability of this training. It is hoped that this study will, in some small measure, help fill this void and provide information beneficial to both the Officer Candidate School authorities, and to those individuals conducting similar research.

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